



# CECAP

Community-wide Energy and  
Climate Action Plan

# Fairfax County Community-wide Energy and Climate Action Plan (CECAP)

## Task Force Meeting 2

### GHG Inventory, GHG Models & Preliminary Goal Setting

March 31, 2020



**Office of Environmental and Energy Coordination**

# Agenda & Meeting Objectives

Task Force Facilitator

Jay Fisette





# Agenda

## **Welcome and Meeting Overview**

Project Overview & Update

## **GHG Inventory & GHG Models**

Introduction to Greenhouse Gas (GHG) Inventories

Fairfax County GHG Inventory – Input & Results

Fairfax County Business-As-Usual (BAU) Scenario & Illustrative Scenarios

## **Goal Setting**

Overview of Goal Setting Process and Best Practices

Review of Goals from Relevant Jurisdictions

## **Wrap Up and Next Steps**

Summary of Call for Questions and Feedback

Preview of Next Meeting

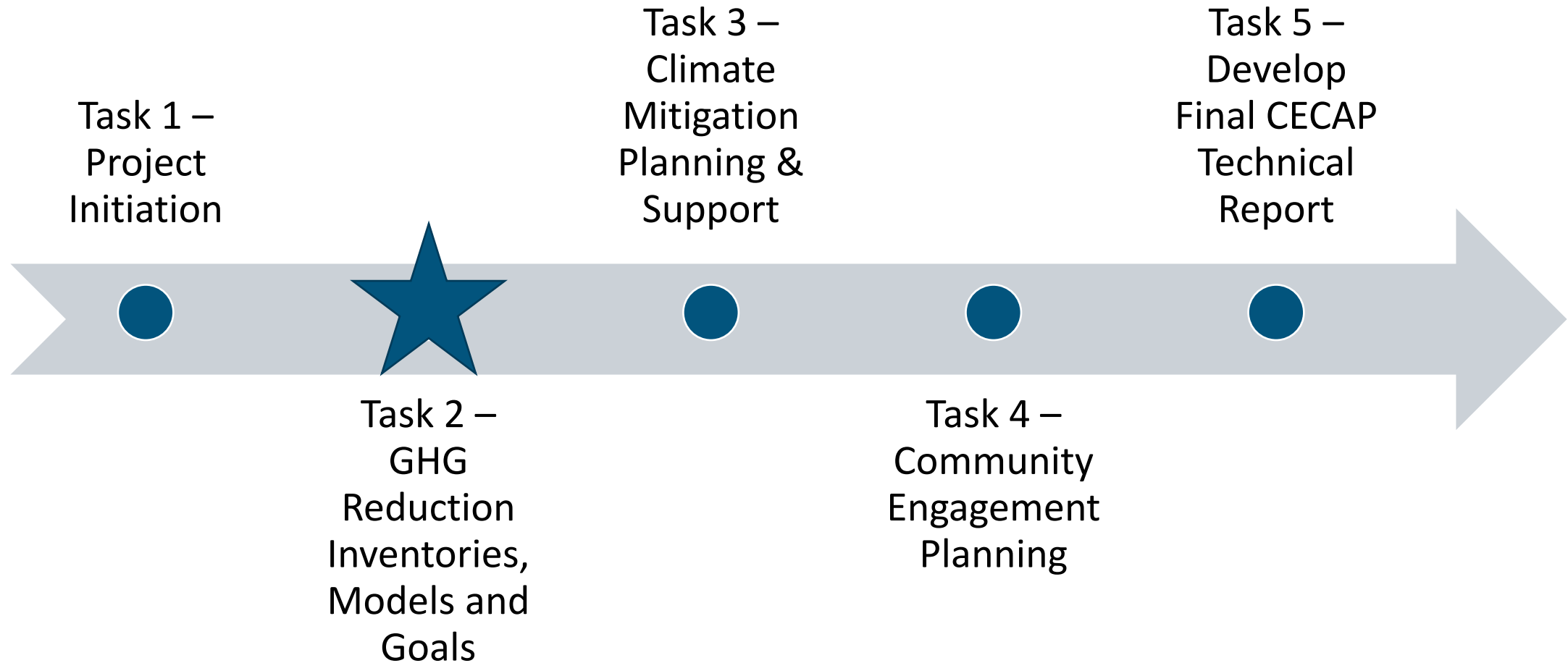
# Project Overview & Update

Fairfax County  
Maya Dhavale





# CECAP Process





# Project Update

- Key project updates include:
  - Held a kickoff meeting for the Task Force on January 31.
  - Held kickoff meetings for Focus Groups between January 6 and 14. Focus Groups identified liaisons to the Task Force for all 9 Focus Groups and have met either virtually or in-person.
  - Developed Rules of Order for both the Task Force and Focus Groups.
  - Developed Fairfax County's 2018 greenhouse gas inventory, business-as-usual projections to 2050 and illustrative GHG reduction scenarios. All materials have been posted to the [CECAP website](#).
  - Began preparing for community engagement and public input.



# Tentative Schedule of Task Force Meetings

\*Due to the COVID-19 situation, **all in-person Task Force and Focus Group meetings will be cancelled** through at least May 1.

Meeting 1 - Kick Off: **Friday, January 24, 2020**

**Meeting 2 – GHG Inventory; Draft Goals: ~~Tuesday, March 31, 2020~~ – Cancelled due to COVID-19. Replaced with this recording.**

**Meeting 3 – GHG Inventory Update; Finalize Goals: ~~Wednesday, April 29, 2020~~ – Cancelled due to COVID-19. Will be rescheduled.**

Meeting 4 – Draft actions/strategies: **May 2020**

Meeting 5 – Impact analyses of actions/strategies: **July 2020**

Meeting 6 – Draft community engagement guide: **November 2020**

Meeting 7 – Finalize community engagement guide: **December 2020**

Meeting 8 – Draft CECAP: **January 2021**

Meeting 9 – Finalize CECAP: **March 2021**





## Update Regarding Ongoing COVID-19 Situation

- The intention is for the CECAP process to continue moving forward as close to the original timeline as possible.
- For the **March meeting**:
  - Review materials were posted by staff on [the main CECAP website](#) for review by Focus Group and Task Force members.
  - The Focus Groups will NOT be providing feedback in advance of the March meeting, but **instead will be providing comments for the April meeting.**
  - Presentations that were planned for the March Task Force meeting are recorded in this webinar. The link was posted on the CECAP website on March 31st.
  - Beginning on April 1st, staff will email discussion questions to all Task Force AND Focus Group members. Responses will be posted on the website.



# Materials for March Meeting

Materials were posted on the main CECAP website for review by Focus Group and Task Force members, here:

<https://www.fairfaxcounty.gov/environment-energy-coordination/cecap-task-force-meeting-march-31-2020>

The screenshot shows the Fairfax County website with a yellow header bar containing a 'Coronavirus Updates' notification. The navigation bar includes links for RESIDENTS, BUSINESS, GOVERNMENT, FAIRFAX COUNTY VIRGINIA, SERVICES, CONNECT, and a SEARCH icon. On the left, a 'DEPARTMENT RESOURCES' sidebar lists links such as 'About Us', 'Policies and Initiatives', 'Climate Action Plan', 'Home Energy Savings', 'County Energy Data', 'Clean Energy', 'Green Business', and 'Employee Engagement'. The main content area features a large heading 'CANCELLED - CECAP Task Force Meeting: March 31, 2020' with a green 'CANCELLED' tag. Below this, the meeting time '3/31/2020 6:00 pm - 3/31/2020 9:00 pm' is listed. The announcement states that due to COVID-19, all in-person meetings are cancelled through at least April 1, and that the process will continue virtually. It mentions that the March Task Force agenda items will be presented virtually and that the Task Force will reconvene in-person at the scheduled April meeting. A section titled 'For the March meeting:' lists four bullet points: 1) Review materials will be posted on the main CECAP website for review by Focus Group and Task Force members. 2) The Focus Groups will NOT provide feedback in advance of the March meeting but will provide comments for the April meeting. 3) Presentations for the March Task Force meeting will be recorded and the link will be posted on the CECAP website on March 31st. 4) Beginning on April 1st, staff will email discussion questions to all Task Force AND Focus Group members, with responses posted on the website. At the bottom, four links are provided: 'Draft Emission Reduction Scenarios Overview', 'Draft Emission Reduction Scenarios Excel Spreadsheet', 'Draft Business-As-Usual Projections', and 'Draft Greenhouse Gas Inventory Methodology Report'.

DEPARTMENT RESOURCES

- About Us
- Policies and Initiatives
- Climate Action Plan
- Home Energy Savings
- County Energy Data
- Clean Energy
- Green Business
- Employee Engagement

## CANCELLED - CECAP Task Force Meeting: March 31, 2020

3/31/2020 6:00 pm - 3/31/2020 9:00 pm

Given the evolving situation with COVID-19, all in-person Task Force and Focus Group meetings will be cancelled through at least April 1. We will continue to evaluate the situation and provide updates as they are available.

The intention is for the CECAP process to continue moving forward as close to the original timeline as possible. The items on the March Task Force agenda will be presented virtually, with hopes that the Task Force will be able to reconvene in-person at the scheduled April meeting to continue the process as originally planned.

For the March meeting:

- Review materials will be posted by staff on the main CECAP website for review by Focus Group and Task Force members (see links below).
- The Focus Groups will NOT be providing feedback in advance of the March meeting, but instead will be providing comments for the April meeting.
- Presentations that are planned for the March Task Force meeting will be recorded and the link will be posted on the CECAP website on March 31<sup>st</sup>.
- Beginning on April 1<sup>st</sup>, staff will email discussion questions to all Task Force AND Focus Group members. Responses will be posted on the website.

[Draft Emission Reduction Scenarios Overview](#)

[Draft Emission Reduction Scenarios Excel Spreadsheet](#)

[Draft Business-As-Usual Projections](#)

[Draft Greenhouse Gas Inventory Methodology Report](#)



## FOIA Reminders

- Both the Focus Groups and the Task Force are subject to FOIA.
- All meetings (of three or more members) are considered public, and must be noticed, open to the public, and have minutes taken. We will post all minutes on the CECAP website.
- You MAY NOT conduct meetings or have discussions of three or more individuals over email.
- Practices to ensure that the CECAP process remains compliant with FOIA are as follows:
  - When materials are distributed, if there are questions either contact staff or the Focus Group Liaison directly.
  - Comments should be sent to the liaison and county staff only.
  - Always use BCC.
  - Do not reply all, if there are any emails that did not use BCC.
  - Do not circulate material to others in your Focus Group or on the Task Force – staff will post the material on the website and email a link.

# Introduction to Greenhouse Gas (GHG) Inventories

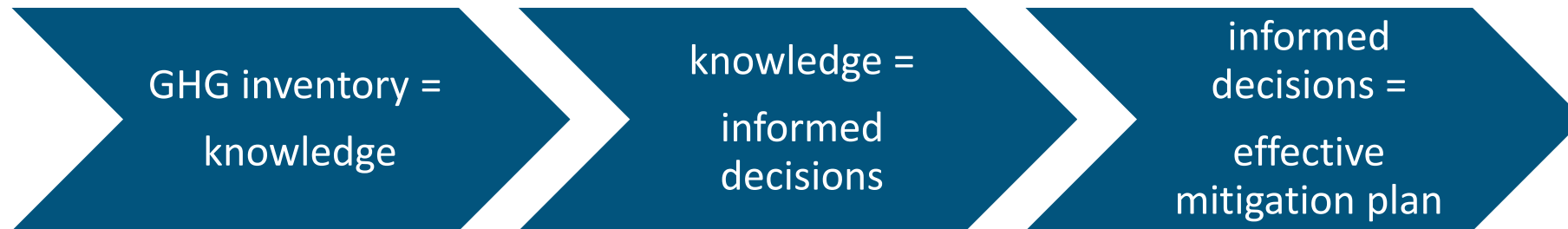
ICF

Cara Blumenthal



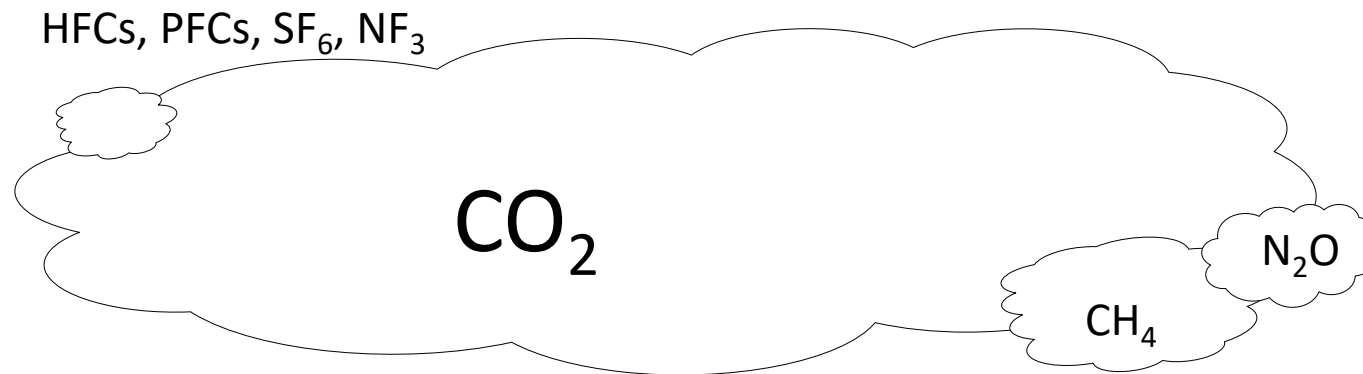
# Why prepare a GHG inventory?

- You can't manage what you don't measure
- Provides a baseline to
  - Understand sources of GHG emissions in the area
  - Inform goal setting
  - Help identify and prioritize mitigation strategies



# GHG Accounting Basics: Gases

- Inventories estimate emissions of greenhouse gases from human activities.
- Greenhouse gases
  - Seven standard gases: Carbon Dioxide ( $\text{CO}_2$ ), Methane ( $\text{CH}_4$ ), Nitrous Oxide ( $\text{N}_2\text{O}$ ), and Fluorinated Gases (HFCs, PFCs,  $\text{SF}_6$ ,  $\text{NF}_3$ )



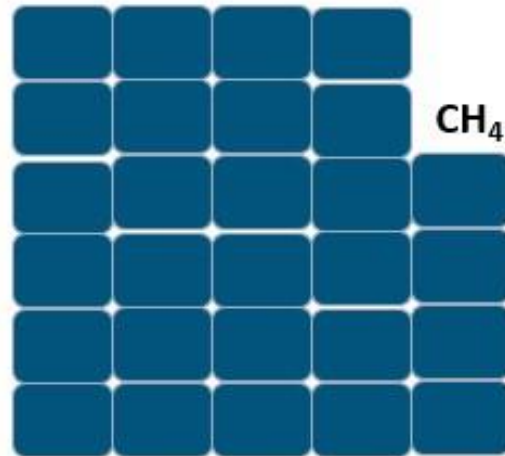
# GHG Accounting Basics: Gases, cont.

- Global Warming Potential (GWP)
  - Reflects a gas's ability to trap heat
  - Defined by IPCC (Intergovernmental Panel on Climate Change)
  - Used to compare emissions of different GHGs in a common unit over a 100-year timeframe (CO<sub>2</sub> Equivalent)

CO<sub>2</sub> = 1



CH<sub>4</sub> = 25\*



\*GWP based on IPCC's Fourth Assessment Report (AR4)

# GHG Accounting Basics: GHGs

- GHGs are not like ambient air pollutants.
- GHGs are well-mixed in the atmosphere globally rather than local sources of pollution.
- There is a global carbon budget— cumulative emissions are important because many GHGs have long atmospheric lifetimes.



# GHG Accounting Basics: Sources

CO<sub>2</sub> and other GHGs are emitted from sources such as:



Energy (building electricity use, on-site fuel use)



Transportation (vehicle fuel combustion)



Waste (landfills, wastewater treatment)



Agriculture (fertilizer use, livestock)



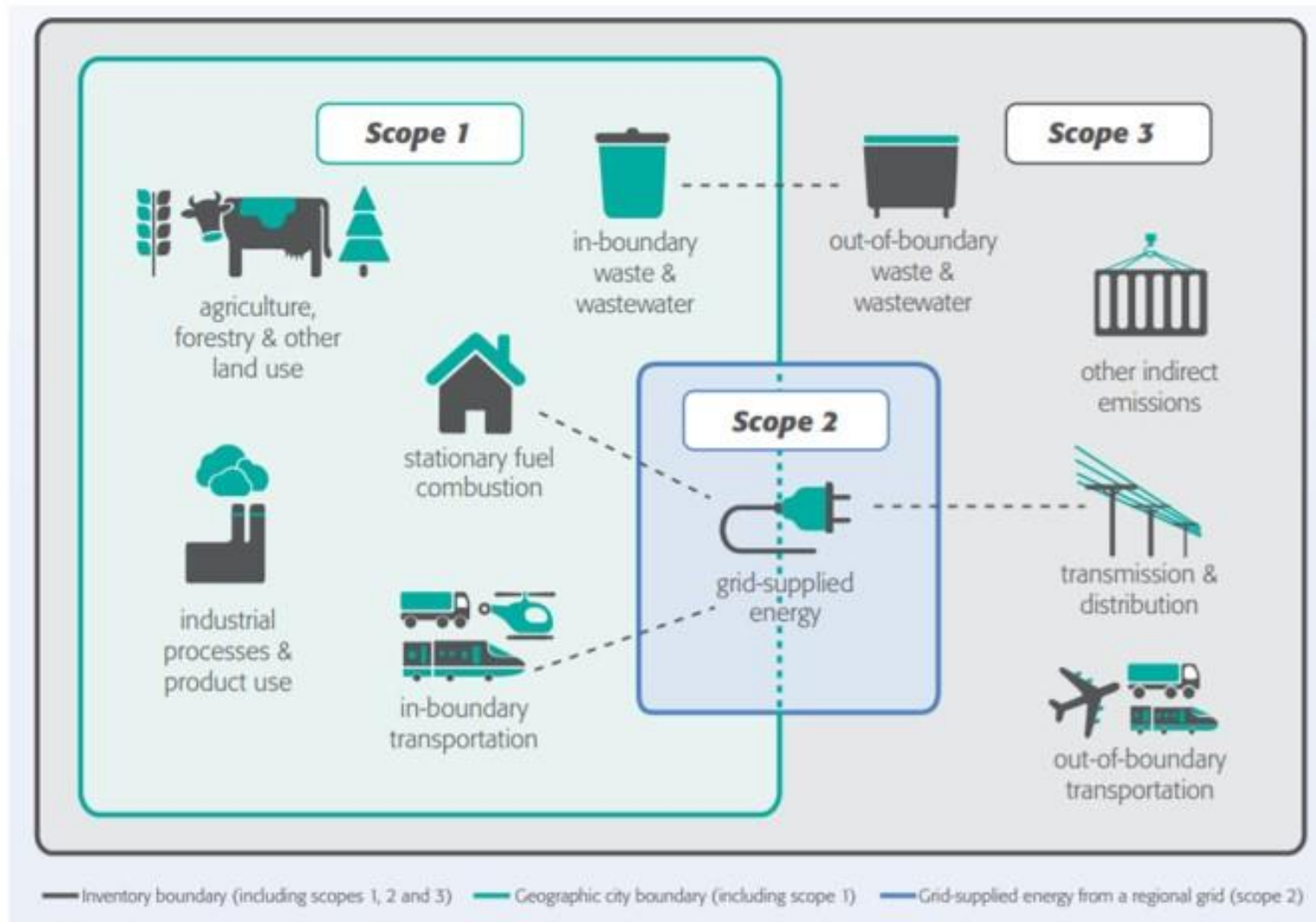
Other (refrigeration, industry)

# GHG Accounting Basics: Scopes

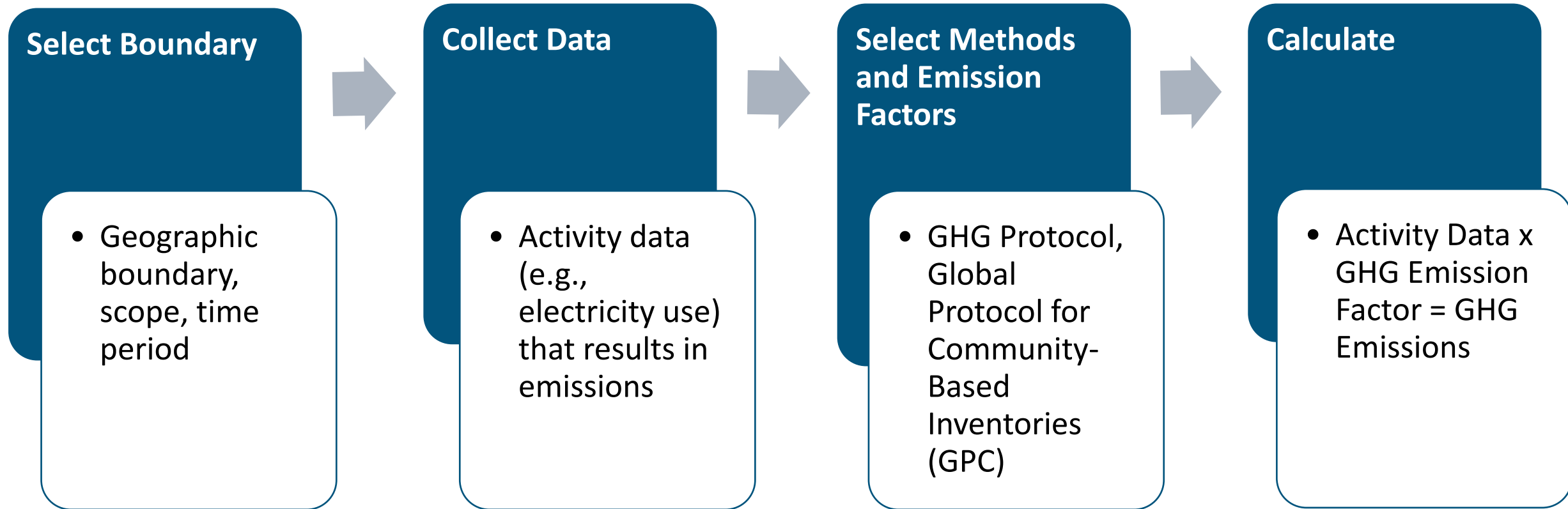
GHG emissions are grouped by “scope” depending on the location of the activity under the geographic boundary approach



# GHG Accounting Basics: Scopes, cont.



# How to Prepare a GHG Inventory



# Fairfax County GHG Inventory – Inputs & Results

Metropolitan Washington  
Council of Governments

Jeffrey King, Chief,  
Climate and Energy Programs



Metropolitan Washington  
**Council of Governments**



# Inventory Background

- GHG emissions community-scale inventories for all 24 COG local government members
- Compliant with standards
  - U.S. Communities Protocol for Accounting and Reporting Greenhouse Gas Emissions (USCP)
  - Global Protocol for Community-Scale Greenhouse Gas Inventories (GPC).
  - Global Covenant of Mayors (GCoM)
  - CDP
- ICLEI ClearPath Tool
- Activities-based approach, meaning emissions are calculated based on the result of an activity happening in the community.

# Inventory Background, cont.

- Emission sources in COG's GHG emissions inventories include:
  - Built Environment
    - Residential and Commercial Energy Use – electricity, natural gas, petroleum fuels
  - Transportation and Mobile Emissions
    - On- and off-road
  - Wastewater Treatment
  - Agriculture
  - Solid Waste
  - Process and Fugitive Emissions

# Inventory Methodology

- Commercial and Residential Energy
  - Annual electric and natural gas data from region's utilities
  - Emissions factors for electricity from EPA's Emissions & Generation Resource Integrated Database (eGRID) for 2018
  - Statewide fuel use from US DOE EIA scaled to region/locality
- On-road and off-road transportation emissions
  - EPA's Motor Vehicle Emission Simulator (MOVES v2014b)
  - VMT data provided by COG's Dept. of Transportation Planning (DTP) transportation demand model
  - Commuter rail emissions calculated using VRE diesel consumption data from Federal Transit Administration scaled to region/locality





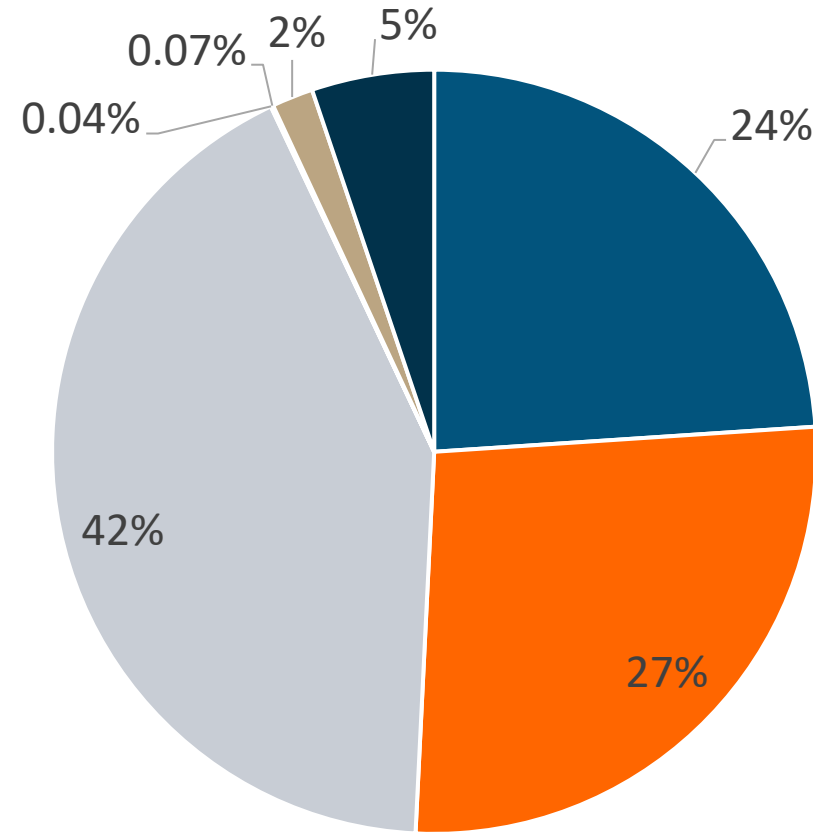
# Inventory Methodology, cont.

- Emissions from Solid Waste
  - Fairfax County solid waste data
- Wastewater treatment
  - Data collected from water utilities serving Fairfax County
- Agricultural emissions
  - EPA's State GHG Inventory Tool, data from EPA's Chesapeake Assessment Scenario Tool, and USDA's Census of Agriculture
- High-GWP Gases (e.g., HFCs)
  - National emissions scaled locally by population

# 2018 Fairfax County Inventory

- Total: 12.2 million metric tons of CO<sub>2</sub> equivalent
- Transportation and Mobile Emissions
  - 42% of emissions
- Commercial Energy
  - 27% of emissions
- Residential Energy
  - 24% of emissions
- Others
  - Process and Fugitive Emissions, Solid Waste, Agriculture, and Wastewater Treatment - 7% of emissions

## Fairfax County 2018 GHG Inventory Sector Shares



Total:  
12.2 MMTCO<sub>2</sub>e

■ Residential Energy ■ Commercial Energy ■ Transport ■ Water Treatment ■ Agriculture ■ Waste ■ Process & Fugitive Emissions

# Change in Fairfax County GHG Emissions between 2005-2018

- Despite 15% growth in population, community-wide GHG emissions decreased by over 10% between 2005 and 2018
  - 13.63 MMTCO<sub>2</sub>e (million metric tons of carbon dioxide equivalent) in 2005 to 12.2 MMTCO<sub>2</sub>e in 2018
- Per capita emissions decreased 22% between 2005 and 2018
  - 13.7 MTCO<sub>2</sub>e (metric tons of carbon dioxide equivalent) in 2005 to 10.7 MTCO<sub>2</sub>e in 2018

# Fairfax County Government Operations

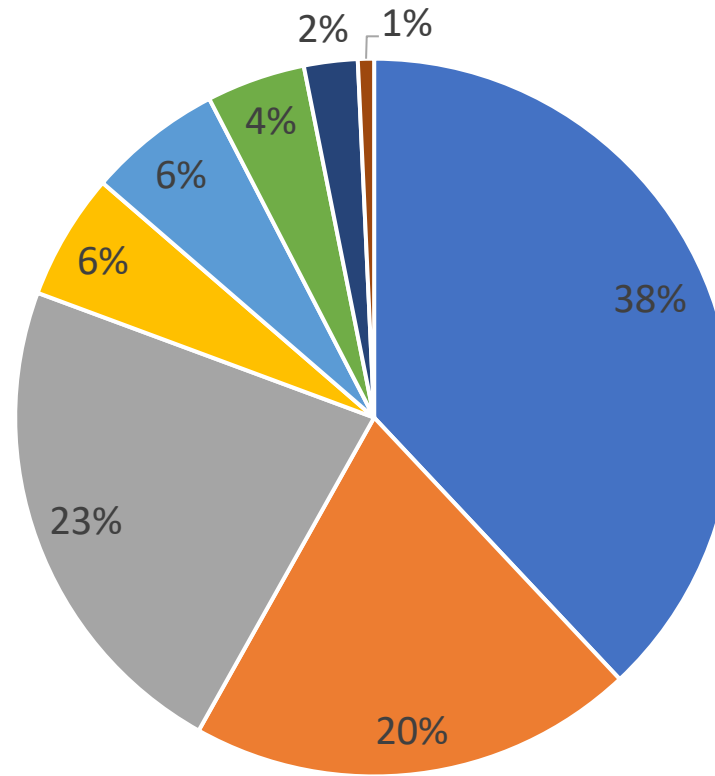
- Government Operations and Schools GHG Emissions: 562,439 MTCO<sub>2e</sub>
- Represents approximately 4-5% of the community wide inventory.
- Sources:
  - Solid Waste Facilities (incineration)
  - Buildings and Facilities (electricity and natural gas)
  - Vehicle and transit fleets
  - Lighting
  - Wastewater/Water

## Fairfax County Government Operations GHG Inventory (2018) MT CO<sub>2</sub>e

Source Sector	Govt Ops	Schools	Total
Buildings and Facilities	113,215	126,647	239,862
Solid Waste Facilities	213,737	---	213,737
Transit Fleets	25,035	---	25,035
Vehicle Fleets	32,047	34,068	66,115
Water and Wastewater	4,095	---	4,095
Lighting (street and traffic)	13,595	---	13,595
Total	401,724	160,715	562,439



## Fairfax County Government and Schools GHG Emission Sources (2018)



Total:  
562,439 MTCO<sub>2</sub>e

- Solid Waste Facilities
- Buildings and Facilities - Govt
- Buildings and Facilities - Schools
- Vehicle Fleets - Govt
- Vehicle Fleets - Schools
- Transit Fleets
- Lighting (street and traffic)
- Water and Wastewater



Metropolitan Washington  
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# Fairfax County Business-as-Usual Scenario & Illustrative Reduction Scenarios

Metropolitan Washington Council of Governments

Jeffrey King, Chief, Climate and Energy Programs



Metropolitan Washington  
**Council of Governments**



# Fairfax County Business as Usual (BAU)

- BAU scenario projects emissions to 2030 and 2050
- Based on the assumptions used, total emissions decreased by 1% between 2018-2030, and increased by 5% between 2018 and 2050 (6% between 2030 and 2050)
  - The decrease between 2018-2030 is associated with a decrease in on-road transportation emissions anticipated by 2030.
  - The projected increase in the outyear is associated with economic growth and increased VMT.

# Fairfax County BAU Approach

- Residential and Commercial Energy Use
  - Existing buildings energy consumption data
  - New residential housing projections and increasing square footage of commercial space per 1,000 job additions from COG's Cooperative Forecast
  - DOE data on Energy Use Intensity (EUI)
  - Estimates from ICF on EUI reductions from new building codes for new construction between 2015 and 2018, then constant through 2050
- On Road Transportation
  - VMT and emissions projected from COG's DTP Transportation Demand Model and EPA's MOVES model

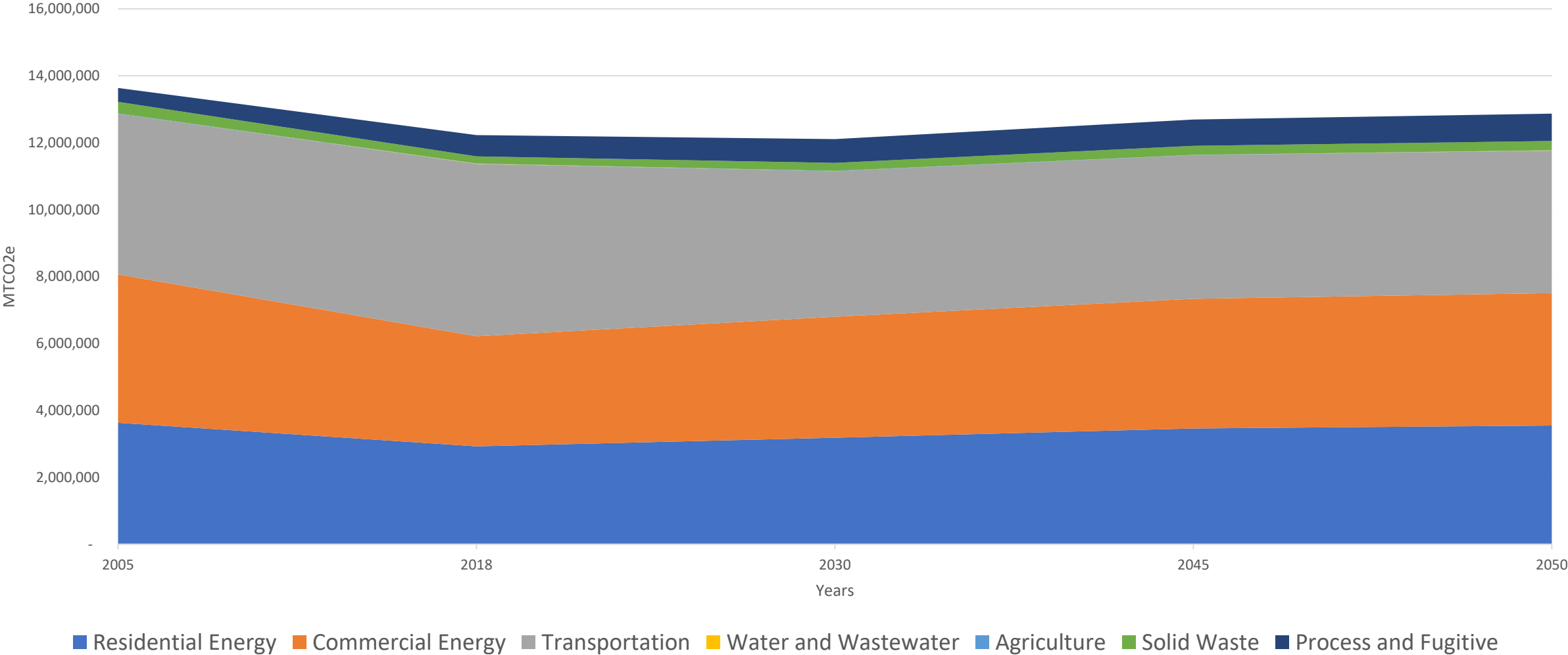
# Fairfax County BAU Approach (2)

- Off-road Mobile and Commuter Rail
  - Held Constant from Inventory Year 2018
- Natural Gas Fugitive Emissions
  - Annual natural gas consumption in therms taken from Residential and Commercial Gas estimates, and the 2018 emissions rate
- Fugitive HFC emissions
  - Emissions per capita in 2018, multiplied by expected population increase from COG's Cooperative Forecasts

# Fairfax County BAU Approach (3)

- Wastewater emissions for septic and sewer treatment
  - Emissions per capita and the percentage of population using each treatment method, multiplied by expected population increase
- Solid Waste Emissions
  - Derived waste generation per capita, multiplied by expected population growth, assuming no change in disposal practices
- Agricultural
  - Recent trends in acres of land in production as a proxy. A decreasing annual rate of change was used based on changes in acres of land in farms from 2007 to 2012 taken from COG's What Our Region Grows Report (2019).

# Fairfax County BAU Projections



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# Fairfax County Reduction Scenarios

- Five emission modeling scenarios for 2030 and 2050 milestone years:
  - Scenario A - Low-moderate reduction scenario for both energy and transportation
  - Scenario B - More aggressive reduction scenario for both energy and transportation
  - Scenario C - Net Zero Grid and Low Carbon Transportation Scenario
  - Scenario D - Net Zero Grid, High Penetration of Low Carbon Gas, and Low Carbon Transportation Scenario
  - Scenario E - 80x50 Scenario including Net Zero Grid, High Penetration of Low Carbon Gas, Low Carbon Transportation and Elimination of HFCs Scenario
    - *(Note 80% below 2005 levels is ~2.7 million MTCO<sub>2e</sub>)*

# Fairfax County Reduction Scenarios, cont.

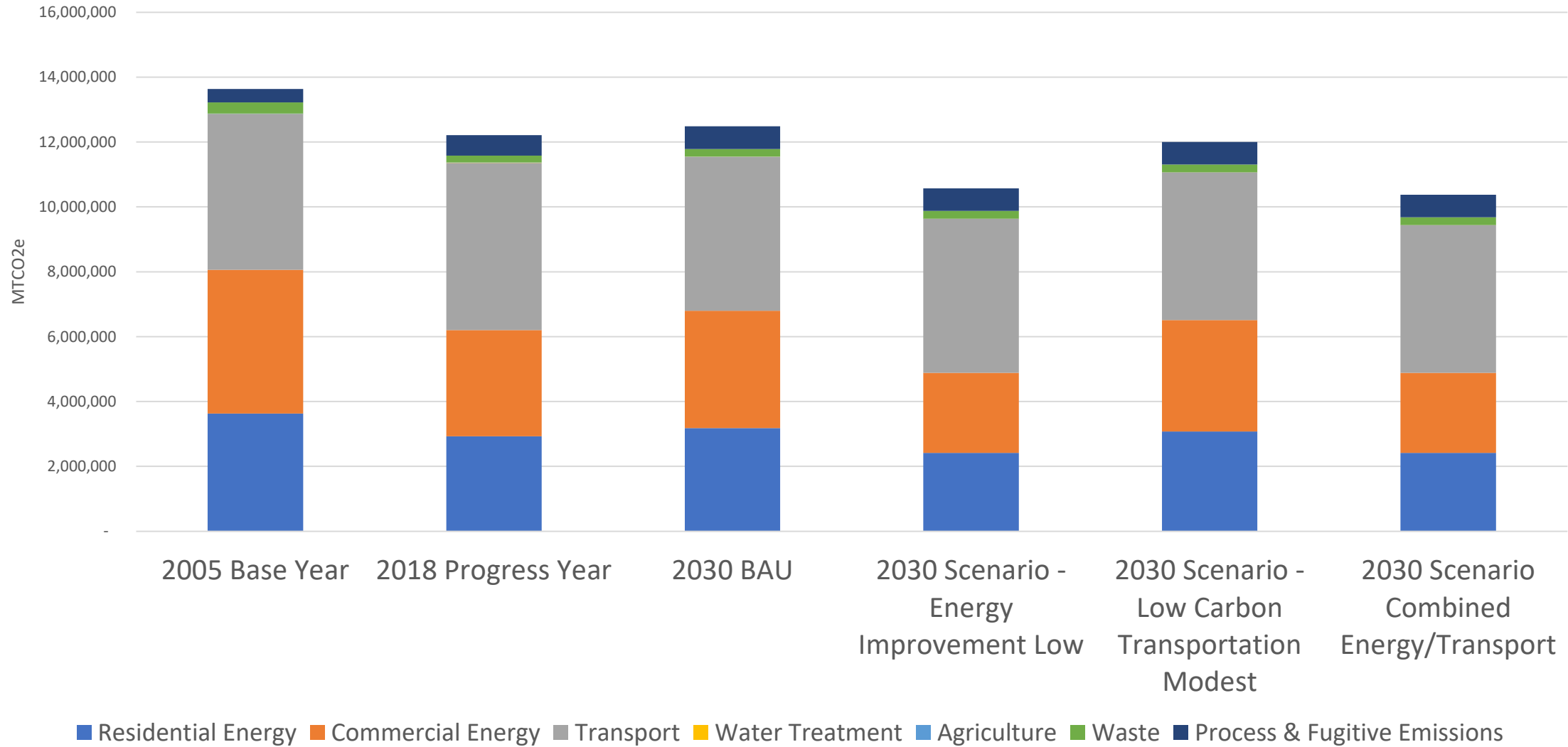
- Analyzed past studies of reduction potential to inform the emission reduction estimates for each sector or subsector
- Reduction estimates related to energy efficiency, grid improvements and renewable energy
  - Applied to the electricity segment of the Residential Energy and Commercial Energy categories (58% of Residential Energy's GHG emissions, and 82% of Commercial Energy's GHG emissions)
- Reduction estimates related to transport
  - Applied to improvements to On Road Mobile Emissions (92% of Transport GHG emissions), and then to light duty vehicle improvements (64% of On Road Transportation GHG emissions)

# Fairfax County Low-Moderate Reduction Scenario A

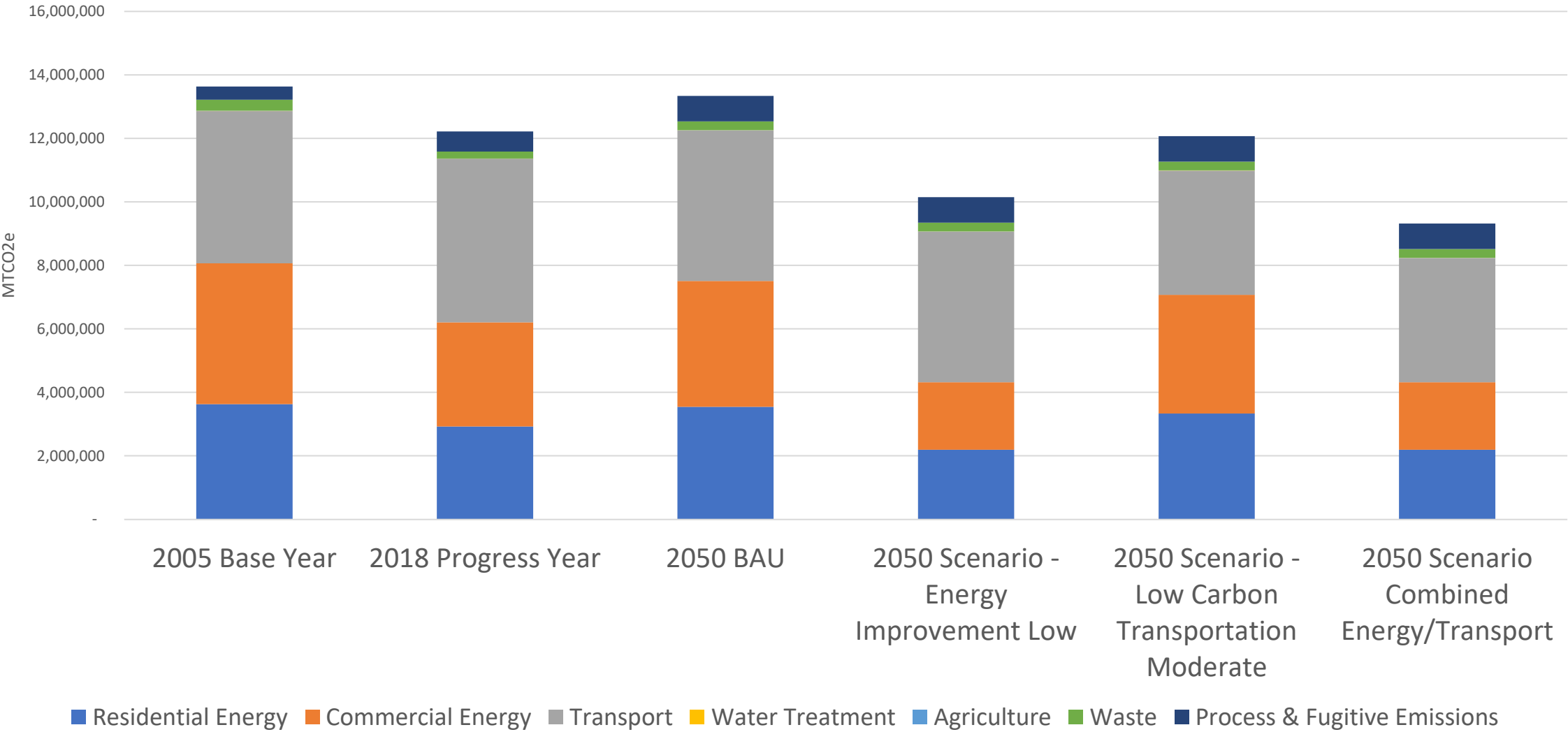
- Modest energy efficiency improvements combined with moderate grid/renewables improvements
  - By 2030
    - 20% EE- grid/renewables improvements
    - 20% low carbon transportation improvements in light duty sector
    - Growth in low carbon transportation combined with the improved energy components
  - By 2050
    - 52% EE - grid/renewables improvements
    - 41% growth in low carbon transportation improvements for light duty vehicles
    - Growth in low carbon transportation combined with the improved energy components



## Fairfax County GHG Emission Reduction Scenario – 2030 Low Reduction Scenario A



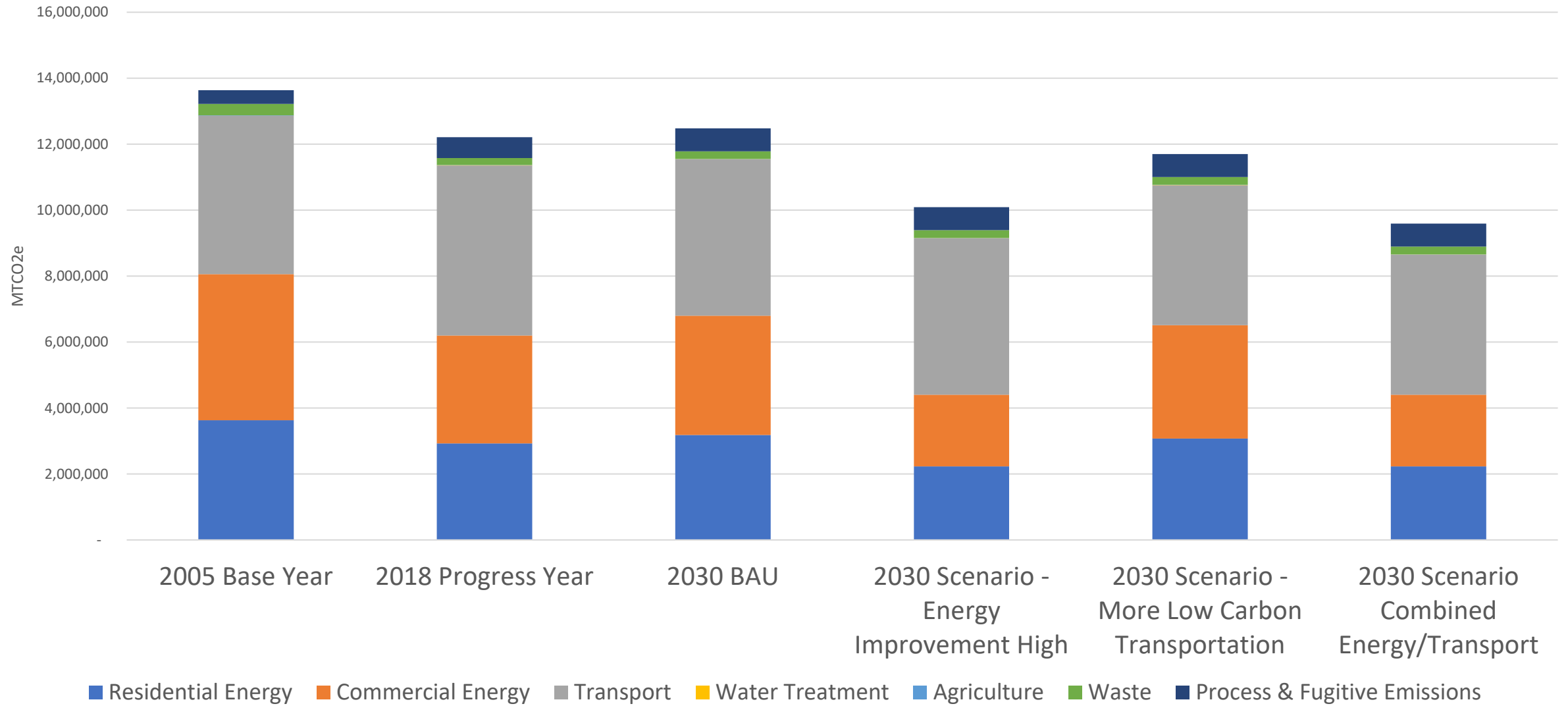
Fairfax County GHG Emission Reduction Scenario – 2050 Low Reduction  
Scenario A



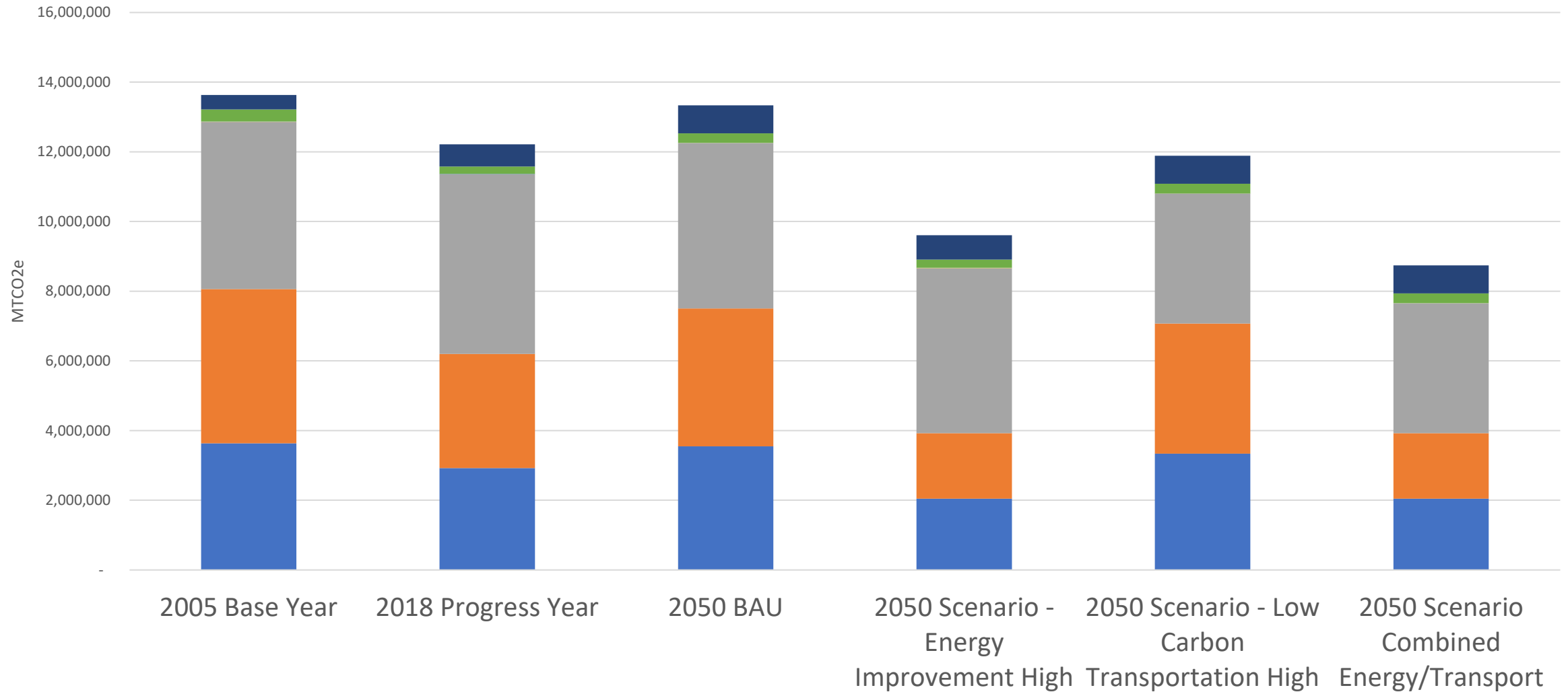
# Fairfax County More Aggressive Reduction Scenario B

- More aggressive energy efficiency improvements combined with moderate grid/renewables improvements.
  - By 2030
    - 41% grid/renewables improvements
    - 30% higher penetration of low carbon transportation improvements in light duty sector
    - Higher low carbon transportation combined with the improved energy components
  - By 2050
    - 52% grid/renewables improvements
    - 47% expansion of low carbon transportation for light duty sector
    - More rapid expansion of low carbon transportation for light duty sector combined with more aggressive renewables

# Fairfax County GHG Emission Reduction Scenario – 2030 Higher Reduction Scenario B



## Fairfax County GHG Emission Reduction Scenario – 2050 Higher Reduction Scenario B



■ Residential Energy
■ Commercial Energy
■ Transport
■ Water Treatment
■ Agriculture
■ Waste
■ Process & Fugitive Emissions

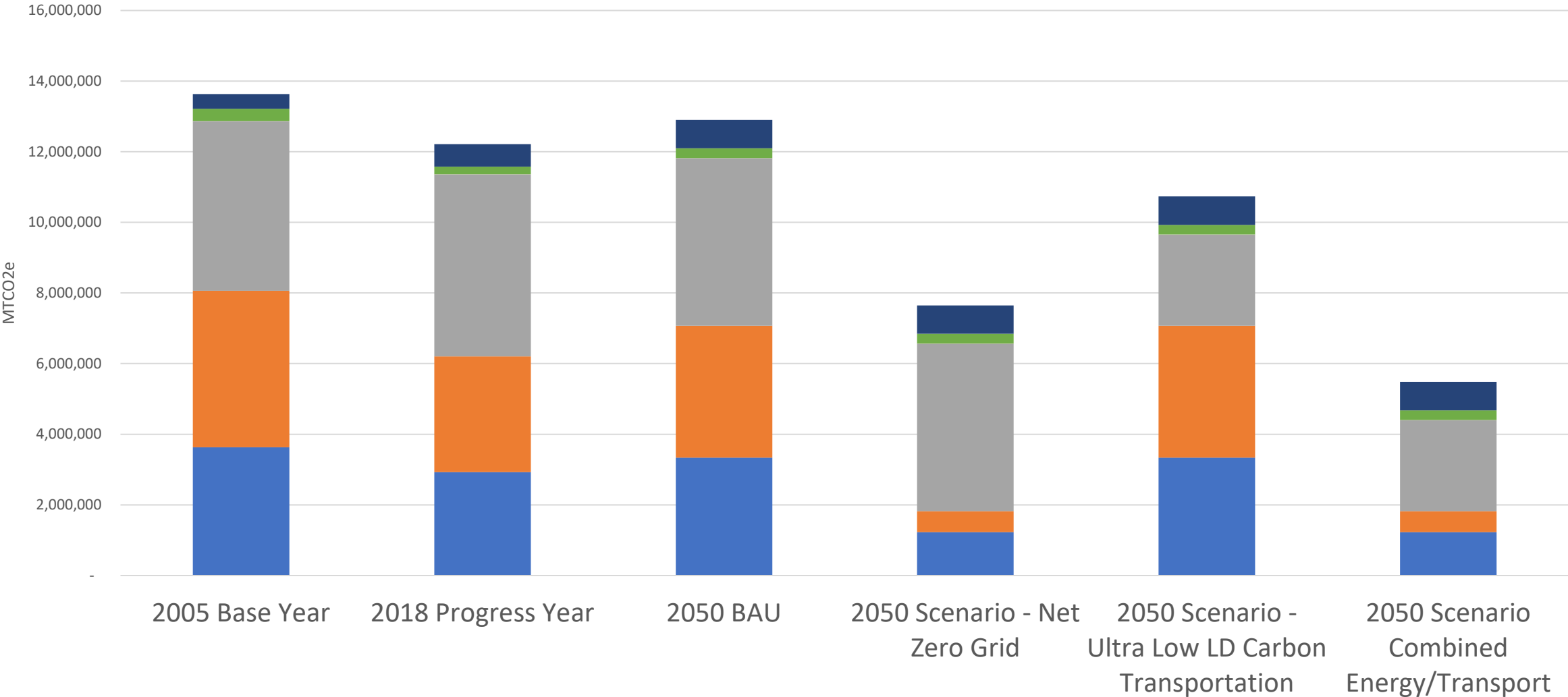


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# Fairfax County Net Zero Grid and Low Carbon Transport Reduction Scenario C

- Achieve 100% renewable grid by 2050 combined with substantial penetration of zero emissions vehicles in the light duty fleet.
  - 100% Net Zero Grid
  - 85% expansion of low carbon transportation for light duty sector
  - Near complete expansion of low carbon transportation for light duty sector combined with net zero grid

# Fairfax County GHG Emission Reduction Scenario – Zero Grid and Low Carbon Transport Scenario C

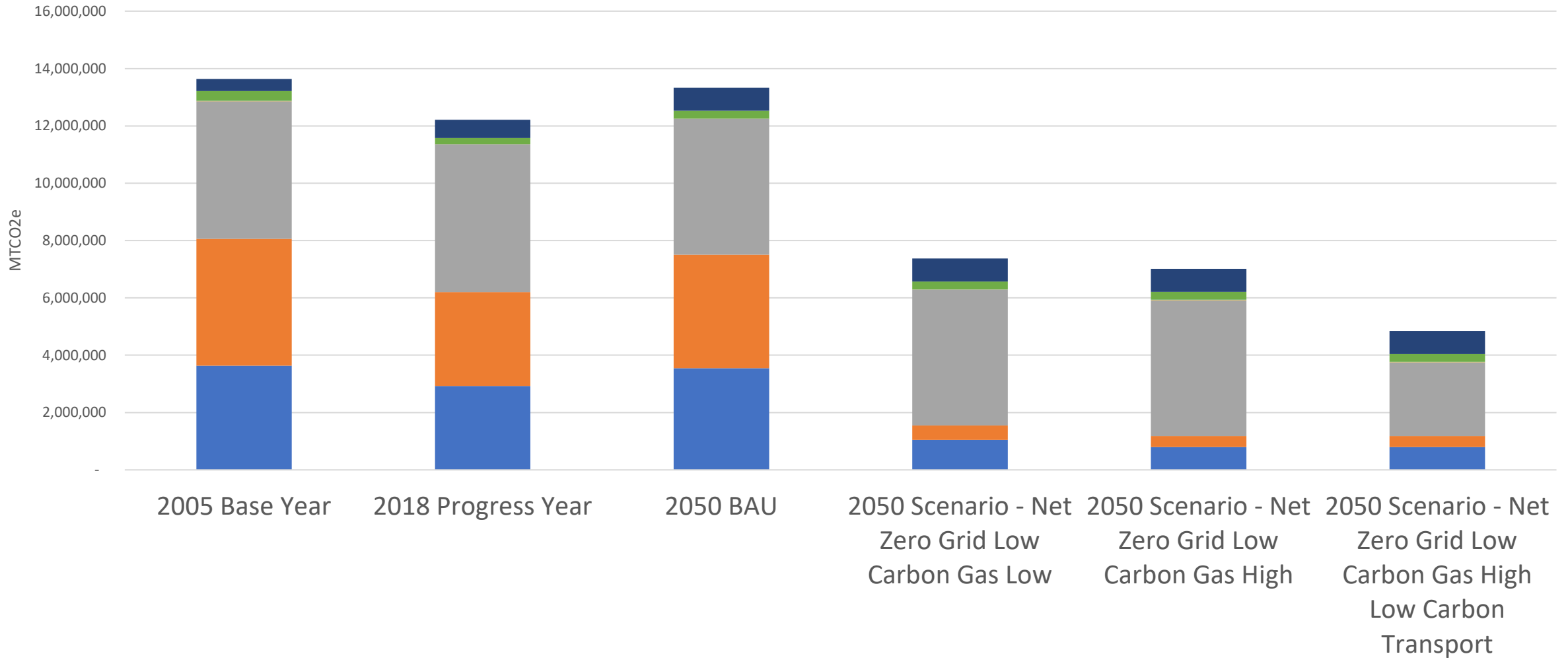


# Fairfax County Net Zero Grid, Low/High Penetration of Low Carbon Natural Gas and Low Carbon Transport Reduction Scenario D

- Achieve 100% renewable grid by 2050 combined with substantial penetration of zero emissions vehicles in the light duty fleet
  - 100% Net Zero Grid
  - 15% to 35% (Low and High) penetration of low carbon natural gas
  - 85% expansion of low carbon transportation for light duty sector
  - Near complete expansion of low carbon transportation for light duty sector combined with net zero grid and high level of low carbon natural gas



## Fairfax County GHG Emission Reduction Scenario – Zero Grid Low Carbon Gas Low Carbon Transport Scenario D



■ Residential Energy 
 ■ Commercial Energy 
 ■ Transport 
 ■ Water Treatment 
 ■ Agriculture 
 ■ Waste 
 ■ Process & Fugitive Emissions

# Results of Emission Reduction Scenarios

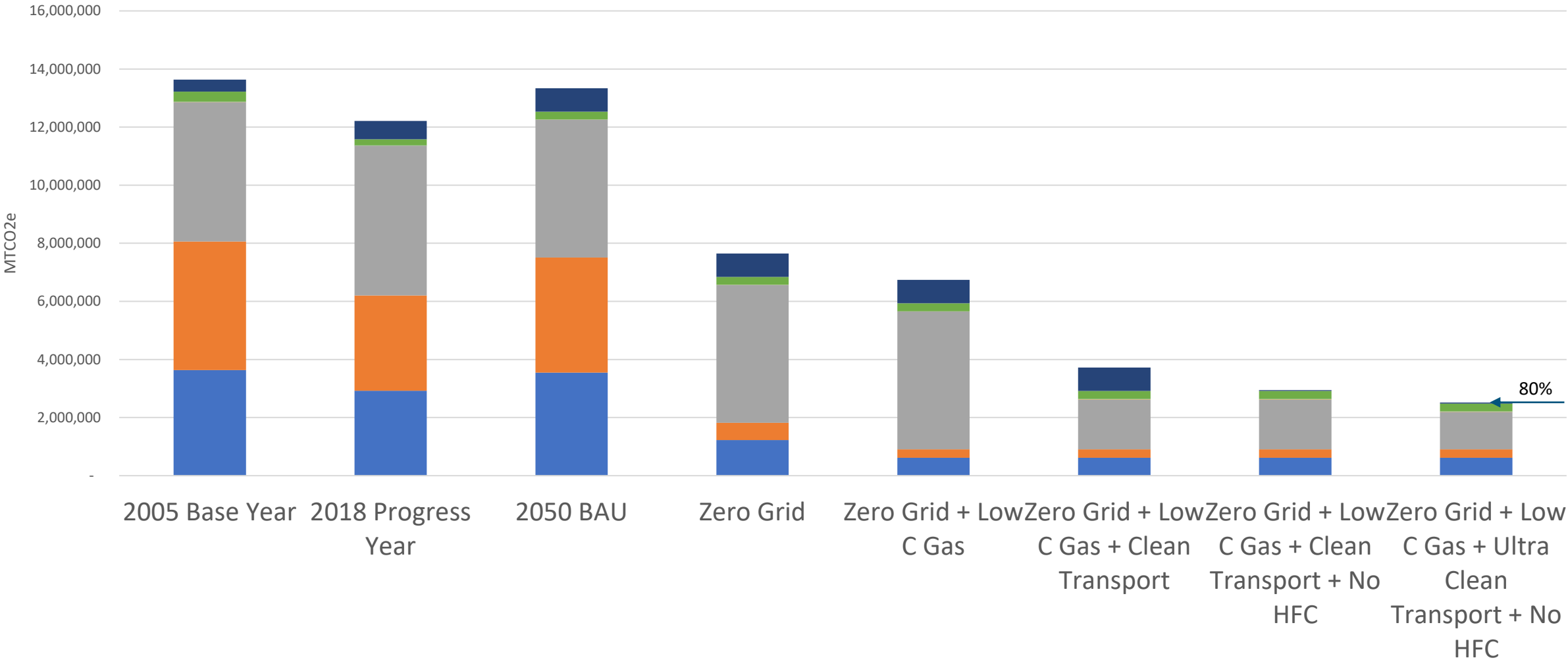
Scenario	County-Wide Emission Reduction by 2030 from 2018 Inventory Year	County-Wide Emission Reduction by 2050 from 2018 Inventory Year	County-Wide Emission Reduction by 2030 from 2005 Base Year	County-Wide Emission Reduction by 2050 from 2005 Base Year
Scenario A: A low-moderate reduction scenario for both energy and transportation	15%	24%	24%	32%
Scenario B: A more aggressive reduction scenario for both energy and transportation	22%	28%	30%	36%
Scenario C: A Net Zero Grid and Low Carbon Transportation Scenario	NA	55%	NA	60%
Scenario D: A Net Zero Grid, High Penetration of Low Carbon Gas, and Low Carbon Transportation Scenario	NA	60%	NA	64%

# Fairfax County 80% Reduction by 2050 Scenario E

- Achieve 80% total emissions reduction by 2050 by way of a net zero grid, and further low carbon transportation penetration.
  - 100% Net Zero Grid
  - 50% natural gas usage for all residential and commercial sector uses is zero carbon/renewable gas
  - 75% expansion of low carbon transportation for all transportation sectors
  - All HFCs are phased out

# Fairfax County GHG Emission Reduction Scenario – 80 x 50

## Scenario E



# Additional Opportunities

- Faster penetration of renewable natural gas
- Faster reductions in emissions from vehicles and fuels for medium and heavy duty fleets, and off-road vehicles
- Role of purchasing carbon offsets and RECs
- Electrification of heating and hot water systems
- Full electrification of light duty fleets
- Waste and sanitation system changes
- Government Operations represents approximately 4-5% of the community wide inventory and presents a unique opportunity to lead by example.

# Overview of Goal Setting Process and Best Practices

ICF

Adam Agalloco



# GHG Protocol Mitigation Goal Standard

- **The GHG Protocol** is a partnership of businesses, NGOs, governments, academic institutions, and others and convened by the World Resources Institute and the World Business Council for Sustainable Development.
- Their mission is to develop **internationally accepted GHG accounting and reporting standards** and tools.
- The GHG Protocol Mitigation Goal Standard is the most **widely used framework for goal setting**.



# Process

The GHG Protocol's steps in designing a mitigation goal:





# Prepare for Goal Design

- 1. Develop a GHG Inventory and baseline scenario**
- 2. Understand mitigation needs and opportunities**
  - Assess how each sector contributes to Fairfax County's overall emissions profile
  - Identify and characterize potential mitigation actions
  - Develop alternative scenarios for potential emissions trajectories
  - Estimate costs and benefits of mitigation options (including co-benefits)

# Goal Boundary

The GHG Protocol defines a goal boundary as the geographic area, sectors, in-jurisdiction and out-of-jurisdiction emissions and removals, and greenhouse gases covered by a mitigation goal.

- **In-jurisdiction emissions** are “emissions from sources located within a jurisdiction’s boundary.”
- **Out-of-jurisdiction emissions** are “emissions from sources located outside of a jurisdiction’s boundary that occur as a consequence of activities within that boundary.”

# Steps in Defining a Goal Boundary

1. **Define geographic coverage.** In this case, Fairfax County.
2. **Choose sectors.** IPCC guidelines group GHG emissions and removals into five main sectors: energy; industrial processes and product use; agriculture, forestry, and other land use; waste; and other.
3. **Decide on treatment of emissions and removals from the land sector.** Options are including it in the goal boundary, including it as a separate sectoral goal, treating it as an offset, or leaving it out.
4. **Choose in-jurisdiction and out-of-jurisdiction emissions.** Identify out-of-jurisdiction emissions for Fairfax County, and decide if they be included in the goal boundary.
5. **Choose greenhouse gases.** The seven most common gases are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, and NF<sub>3</sub>.

# Goal Type

The GHG Protocol Mitigation Goal Standard categorizes goals into four types:

- **Base year emission goals:** reduce emissions by a specified quantity relative to a historical base year (e.g. 60% below 2005 levels)
- **Fixed-level goals:** reduce emissions to an absolute emissions level in a target year (e.g. carbon neutrality by 2050 or 1 metric tons per person by 2040)
- **Base year intensity goals:** reduce emissions intensity by a specified quantity relative to a historical base year (e.g. reduce emission intensity by 20% by 2035)
- **Baseline scenario goals:** reduce emissions by a specified quantity relative to a projected emissions baseline scenario (e.g. 30% below baseline scenario for 2030)

# Key Takeaways from Review of Other Climate Action Plans

ICF reviewed over 40 city- and county-level climate action plans.

Key takeaways from this review are included throughout this presentation in blue flags.

# Choosing a Goal Type

- **Base-year emissions goals** and **fixed-level goals** are the simplest to account for, most certain, and most transparent
- **Base year intensity goals** require projections and assumptions regarding the level of output in the target year, and may be more uncertain compared to base-year emissions goals or fixed-level goals
- **Baseline scenario goals** are more challenging to assess and are inherently uncertain because they rely on projections of the future

**Base-year emissions goals** are the most common type of greenhouse gas mitigation goal among DC-area municipalities.

# Goal Time Frame

The **most commonly used target years** among DC-area municipalities are 2025, 2030 and 2050. (Other target years include 2023, 2032, and 2040). Jurisdictions typically choose **multiple interim years** to guide the path of emissions downward to the long-term goal (e.g., 2020, 2035, 2040).

Defining the goal time frame includes three steps:

1. **Choose the base year** (for base year emissions goals and base year intensity goals)
2. **Choose whether to adopt a single-year or multi-year goal**
  - Multi-year goals may have a better chance of limiting cumulative emissions
  - Multi-year goals can also be referred to as a "long term goal" with "interim goals"
3. **Choose the target year or period**
  - The GHG Protocol recommends setting a combination of short- and long-term goals consistent with an emissions trajectory that phases out greenhouse gas emissions in the long term

# Goal Level

**Goal level:** the quantity of emission reductions within the goal boundary in the target year or period that Fairfax County commits to achieving.

The GHG Protocol recommends that goal levels:

1. **Substantially reduce emissions** below the business-as-usual emissions trajectory
2. **Correspond to an emissions trajectory that is in line with reductions necessary to avoid dangerous climate change impacts**, as determined by the most recent climate science. GHG emissions reduction targets are considered “**science-based**” if they are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement—to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C

The **most common 2050 goal** is an **80 percent reduction from 2005**, which is in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement.





# Attainable and Aspirational

## Attainable

- A goal is considered “attainable”
  - if the goal-setting entity has laid out a path to achieve it, such as a suite of specific policy options that, if implemented, are expected to meet the emissions reduction goal.
  - if there has been some analysis to determine that the goal is feasible.
- Short-term or interim goals are more likely to be attainable with current technologies than longer term goals.

More than 75% of the GHG reduction goals with target years of 2030 or earlier were considered attainable.

## Aspirational

- A goal is considered “aspirational” if there is no clear path outlined for meeting the goal
- Long-term goals (e.g., goals with a target year of 2050) tend to be more aspirational than attainable.

More than 90% of goals with target years of 2040 or later were considered aspirational.

# Definitions of Common Goals

**Zero carbon:** No carbon emitted

**Carbon neutral:** Refers to achieving a net zero carbon emissions by balancing carbon released with an equivalent amount sequestered or offset through carbon credits

# Additional Goal Types

- **Sector-specific goals** generally did not specify a GHG emission reduction target. Instead, goals were set for specific metrics that would contribute to the overall goal of reducing emissions and/or energy use.
- **Adaptation goals** - The extent to which adaptation and resilience are discussed within each plan varies from plan to plan. Some plans mention resilience as a consideration, but do not have any strategies or goals specific to climate resilience. Several plans include one or two strategies specific to adaptation and resilience while other plans dedicate entire sections or chapters to the topic.

Just under **half** of the plans reviewed include **sector-specific** goals.

Roughly **two thirds** of the plans included, at some level, a discussion of **adaptation and resilience**.

# Summary of Commonly Adopted Goals

- ICF reviewed of over 40 city- and county-level climate action plans.
  - **Base-year emissions goals** are the most common type of greenhouse gas mitigation goal among DC-area municipalities.
  - The most common 2050 goal is an **80 percent reduction from 2005** emission levels because this level of ambition is in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement.
  - The most commonly used target years for GHG emission reduction goals are **2025, 2030 and 2050**. (Other target years include 2023, 2032, and 2040).
  - Jurisdictions typically choose **multiple target years** in the interim period to guide the path of emissions downward to the long-term goal (e.g., 2020, 2035, 2040).
  - Just under half of the plans reviewed include **sector-specific goals**.
- City and county governments have also committed to coalitions such as **We Are Still in** and **Ready for 100**.

# Example Goals from Relevant Jurisdictions

City/County	GHG Goal	Other Goals	Climate Action/Energy Plan
Arlington County, VA	2050 - <b>Carbon neutral</b>	2025 – <b>100% RE County Government</b> 2035 - <b>100% RE Community</b>	2019
Albemarle County, VA	2050 - <b>Net zero</b>	Under development	Under development (Draft available)
Alexandria, VA	2050 - <b>80-100%</b> from 2005 baseline	Under development	Under development (2011)
Washington, DC	2050 - <b>Carbon neutral</b>	2032 – <b>100% Renewable Energy</b> 2045 – <b>100% Clean or Electric Public Transit</b>	2018
Montgomery County, MD	2035 - <b>Carbon neutral</b>	2017 - <b>6 MW Solar County Government</b> 2020 – <b>Reduce Petroleum Consumption 20% County Government</b> <b>New County LEED Silver Buildings</b>	Under development
Prince George's County, MD	2050 - <b>80%</b> from 2005 baseline	2022 – <b>20% Renewable Energy County Government</b> <b>Various Energy Efficiency Goals</b>	2014
MWCOG's Regional Goal	2050 – 80% from 2005 baseline		2017

# Wrap Up and Next Steps



## Summary of Call for Questions & Feedback

**Respond to questions via the Google Form which will be sent out on April 1, 2020.**

1. This presentation provides information about Fairfax's GHG inventory, business-as-usual projections, illustrative reduction scenarios, and goal setting. What questions do you have about the presentation materials?
2. In the next stage of work, we need to begin limiting the number of scenarios that would get a deeper analysis. Please rank the top two scenarios that you would like to get further analysis. See slides 32 through 52 and the materials on the [CECAP Task Force Meeting: March 31, 2020 webpage](#) for more information on the reduction scenarios.
3. A target year(s) establishes a timeframe that the GHG reduction goal should be achieved by. What should be our target year? See slide 63 for more information about target year selection.



## Summary of Call for Questions & Feedback, cont.

**Respond to questions via the Google Form which will be sent out on April 1, 2020.**

4. Should there be interim year goals? See slide 63 for more information about interim year goal selection.
5. Is it more important for Fairfax's target year goal to be attainable or aspirational? See slide 65 for definitions of each.
6. Should the plan include sector-specific goals? See slide 67 for more information about sector-specific goals.
7. What other questions or comments do you have?



# Upcoming Dates & Deadlines

- **April 1** – Questions will be sent out via Google Form.
- **April 10** – Answers to questions in the Google Form are due.
- Answers to questions will be posted in the order they are received.
- Task Force Meeting 3 (GHG Inventory Update; Finalize Goals) originally scheduled for Wednesday, April 29, 2020, is cancelled due to COVID-19. **Stay tuned for a reschedule date.**



## OEEC Climate Action News Blog & Twitter

CECAP Homepage: <https://www.fairfaxcounty.gov/environment-energy-coordination/cecap>

Office of Environmental & Energy Coordination (OEEC) Climate Action News blog: <http://www.fairfaxcounty.gov/environment-energy-coordination/climateaction/news>

Twitter: @ffxgreen/#ffxCECAP

**Follow for updates on the CECAP process and timely subject matter articles** will be posted on a regular basis.

**Learn** about the topics and trends driving the climate conversation in Fairfax County.

# Thank You!

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**Office of Environmental and Energy Coordination**